SECTION C
DESCRIPTION/SPECIFICATIONS/WORK STATEMENT

C.1 STATEMENT OF WORK

The work under this contract shall be performed in accordance with the Statement of Work, Section J, Attachment (1) and as specified in individual delivery orders issued hereunder.

C.2 SPECIFICATIONS, APPLICABLE DOCUMENTS, AND REVISIONS

The following is a list of all applicable revisions or amendments to specifications cited in the schedule or cited in reference drawings:

SPECIFICATION	REVISION/AMENDMENT	DATE
(as specified in individual delivery orders)		

C.3 CONTRACTOR WORK FORCE RESPONSIBILITY

It shall be the full responsibility of the contractor to organize, furnish, maintain, supervise, and direct a working force, which within the limitations of the provisions of the contract, is thoroughly capable of effectively performing the work set forth in this contract.

C.4 PERSONNEL STANDARD LEVEL OF QUALITY

The quality and caliber of personnel presented in the contractor's proposal, provided such personnel meet or are above any minimum requirements set forth herein as Section J, Attachment 2, Personnel Requirements, shall become the standard for personnel performing under the contract by which the contractor shall be bound throughout the contract.

C.5 TRANSFER AND EXCHANGE OF PERSONNEL

Stability and continuity of work force composition are primary constituents of satisfactory performance. To this end, it is understood and agreed that the contractor shall maintain the coherence and continuity of its proposed work force. Accordingly, failure to provide comparable replacement personnel or excessive transfer of personnel included in the proposed work force shall be considered to fall within and be subject to the "Termination" clause of the contract.

C.6 5252.237-9400 SUBSTITUTION OR ADDITION OF PERSONNEL (NAVSUP) (JAN 1992)

(a) The offeror agrees to assign to the contract those persons whose resumes, personnel data forms or personnel qualification statements were submitted as required by Section L

to fill the requirements of the contract. No substitution or addition of personnel shall be made except in accordance with this clause.

(b) The offeror agrees that during the first ninety (90) days of the contract performance period, no personnel substitutions will be permitted unless such substitutions are necessitated by an individual's sudden illness, death or termination of employment. In any of these events, the contractor shall promptly notify the contracting officer and provide the information required by paragraph (d) below.

(c) If personnel for whatever reason become unavailable for work under the contract for a continuous period exceeding (30) working days, or are expected to devote substantially less effort to the work than indicated in the proposal, the contractor shall propose a substitution of such personnel, in accordance with paragraph (d) below.

(d) All proposed substitutions shall be submitted in writing, to the Contracting Officer at least fifteen (15) days (thirty (30) days if a security clearance must be obtained) prior to the proposed substitution. Each request shall provide a detailed explanation of the circumstances necessitating the proposed substitution. All proposed substitutes (no matter when they are proposed during the performance period) shall have qualifications that are equal to or higher than the qualifications of the person being replaced.

(e) In the event a requirement to increase the specified level of effort for a designated labor category, but not the overall level of effort of the contract occurs, the offeror shall submit to the Contracting Officer a written request for approval to add personnel to the designated labor category. The information required is the same as that required in paragraph (d) above. The additional personnel shall have qualifications greater than or equal to at least one (1) of the individuals proposed for the designated labor category.

(f) The Contracting Officer shall evaluate requests for substitution and addition of personnel and promptly notify the offeror, in writing, of whether the request is approved or disapproved.

(g) If the Contracting Officer determines that suitable and timely replacement of personnel who have been reassigned, terminated or have otherwise become unavailable to perform under the contract is not reasonably forthcoming or that the resultant reduction of productive effort would impair the successful completion of the contract or the delivery order, the contract may be terminated by the Contracting Officer for default or for the convenience of the Government, as appropriate. Alternatively, at the Contracting Officer's discretion, if the Contracting Officer finds the contractor to be at fault for the condition, he may equitably adjust (downward) the contract price or fixed fee to compensate the government for any delay, loss of damage as a result of the contractor's action. (End of clause)

C.7 5252.237-9401 PERSONNEL QUALIFICATIONS (MINIMUM) (NAVSUP) (JAN 1992)

(a) Personnel assigned to or utilized by the Contractor in the performance of this contract shall, as a minimum, meet the experience, educational, or other background requirements set forth below and shall be fully capable of performing in an efficient, reliable, and professional manner. If the offeror does not identify the labor categories listed below by the specific title, than a cross-reference list should be provided in the offeror's proposal identifying the difference.

(b) The Government will review resumes of contractor personnel proposed to be assigned, and if personnel not currently in the employ of Contractor, a written agreement from potential employee to work will be part of the technical proposal.

(c) If the Ordering Officer questions the qualifications or competence of any person performing under the contract, the burden of proof to sustain that the person is qualified as prescribed herein shall be upon the Contractor.

(d) The Contractor must have the personnel, organization and administrative control necessary to ensure that the services performed meet all requirements specified in delivery orders. The work history of each Contractor employee shall contain experience directly related to the tasks and functions to be assigned. The Ordering Officer reserves the right to determine if a given work history contains necessary and sufficiently detailed, related experience to reasonably ensure the ability for effective and efficient performance.

Labor Categories	Minimum Requirements
See Section J, Attachment (2), Personnel Requirements	

(End of Section)

ENGINEERING SERVICES
IN SUPPORT OF SHORE FACILITIES
RESEARCH AND DEVELOPMENT PROGRAMS
STATEMENT OF WORK

1.0 BACKGROUND AND SCOPE

The Navy possesses a wide variety of waterfront facilities at various bases in the United States and around the world. These facilities are vital to the Navy's primary mission. The demands imposed by base closures will require adapting remaining facilities to accept a greater variety of vessels, environmental concerns which limit or deny use of traditional waterfront materials, and the requirement for lower life cycle cost solutions. Facilities planners and designers seek innovative solutions for waterfront design, construction, maintenance, and repair.

The contractor shall provide expert-level engineering, technical and logistical services, facilities, equipment and supplies to support research and development programs for the Naval Facilities Engineering Service Center (NFESC) and other Naval Facilities Engineering Command (NAVFAC) organizations. The effort includes the areas of high performance materials, the environment, buildings, and infrastructure design. The contractor must have established working relationships with the civil engineering community throughout the United States and world-wide in order to quickly identify appropriate resources with the required expert-level civil engineering expertise, exemplified in Attachment (A) which is not all inclusive. Required work will be related to waterfront facilities engineering and other unique Navy facilities requirements, such as submarine fendering systems, dry docks configured for naval combat ships, and remote portable waterfront facilities. The following types of work are representative of that which the contractor will be required to perform: (1) Perform research consistent with national civil engineering research priorities. (2) Coordinate and leverage research through cooperative programs with established, state-of-the-art research and development organizations. (3) Verify state-of-the-art technology; advance and implement emerging technologies. (4) Integrate industry, academia, government agencies, and associations in conducting civil engineering research and development. (5) Design and implement civil engineering research and development considering global infrastructure requirements and technology approaches. (6) Identify and develop teams with civil engineering and related expertise using the best qualified organizations.

2.0 TECHNICAL REQUIREMENTS

2.1 Provide expert-level peer reviews of proposed execution plans for technology development, demonstration and validation programs (referred to as Research and Development).

2.2 Conduct expert-level peer reviews of test plans and protocols, and evaluation of test data from technology development, demonstration and validation program tests and analyses. Provide evaluation of advanced technology design and construction concepts and recommendations for the development of new design, construction, maintenance, or repair methods.

2.3 Provide **constructability evaluations** of proposed advanced technology concepts along with recommendations for new construction methods development to enable the practical realization of advanced technology in real construction contexts.

2.4 Organize collaborative research projects in industry-related research and technology development and facilitate bringing other groups together with the Government to leverage limited resources and help minimize duplication of effort.

2.5 Develop detailed performance specifications for the acquisition of advanced technology for new design and construction, rehabilitation/repair processes, and maintenance. Define QA/QC requirements for real time evaluation of construction projects for acceptance purposes.

2.6 Provide assessment of A&E information needs to enable incorporation of advanced technologies and material concepts into the design of real projects.

2.7 Explore the feasibility of a "test and evaluation" precursor to final design in "design-build" contracts as a means of reducing technical and financial risk. Propose a process for industry acceptance including controlled field trials. Essentially develop a "design-test, design-build" with industry-wide consensus.

2.8 Provide expert level services in support of technical evaluation of innovative technologies.

2.9 Prepare reports, plans, and provide technical documentation in support of RDT&E projects.

3.0 POTENTIAL TASKS

The following are examples of potential tasks, not all inclusive, that may or may not be ordered under a delivery order issued against this contract.

3.1 Review the current concepts for advanced fendering system design including a review of current industry processes and results from CPAR efforts to select appropriate technology.

3.2 Set up and administer a "zero maintenance" waterfront evaluation panel to review concepts for funding based on technical merit, constructability, and risk.

3.3 Establish an evaluation panel of technical experts to review concepts for improved maintenance of Navy real property.

3.4 Identify technical information gaps (and poorly packaged information) of the environmental and energy conservation parameters needed to evaluate and optimize waterfront construction based on sustainable design principles. Define or determine the research necessary to acquire quantitative knowledge and present it in a form usable by planners, designers, and engineers in the sustainable design business.

3.5 Develop algorithms for computer-aided planning and decision-making processes, based on "green" sustainable design principles. Define or determine the research necessary to acquire quantitative knowledge and present it in a form usable by planners, designers, and engineers in a sustainable design business.

3.6 Evaluate design-build contracts executed by NAVFAC to date and interview government engineers and performing designers and builders to ascertain specific instances of advanced, innovative technology usage facilitated by the design-build contract. Establish particular lessons as guides for promoting design-build contracting instruments that enhance innovation.

3.7 Explore the market's acceptability of a process for advanced technology demonstration "set-aside" in government construction and the administration and disposition of resulting "know-how," i. e, proprietary vs. Public domain. Evaluate against Federal Acquisition Regulations and other public policy documentation.

TITLE	EXPERTISE	DEGREES	EXPERIENCE
Civil Engineer	Waterfront Facilities	B.S., M.S., Ph.D. and P.E.	10 years of relevant experience in the field of Waterfront Facilities design and construction with an emphasis on the use of composite materials
Structural Engineer	Waterfront Structures	B.S., M.S., Ph.D. and P.E.	10 years of relevant experience in the field of Waterfront Structures design and construction with an emphasis on the use of composite materials
Materials Engineer	Concrete	B.S., M.S., Ph.D.	10 years of relevant experience in the field of marine concrete research and design
Materials Engineer	Composites	B.S., M.S., Ph.D.	10 years of relevant experience in the use of composite materials in construction applications
Materials Engineer	Wood	B.S., M.S., Ph.D.	10 years of relevant experience with the development of engineered wood products
Materials Engineer	Steel	B.S., M.S., Ph.D.	10 years of relevant experience in the use of steel in the marine environment
Metallurgist	Corrosion	B.S., M.S., Ph.D.	10 years of relevant experience with steel and corrosion in the marine environment
Research Scientist	Wood Technology	B.S., M.S., Ph.D.	10 years of relevant experience with the development of engineered wood products
Research Scientist	Polymer Chemistry	B.S., M.S., Ph.D.	10 years of relevant experience in polymer chemistry and polymer composites
Design Engineer	Engineering Design Software	B.S., M.S.	10 years of relevant experience with computer engineering design and drawing